

NOISE ELEMENT

1.0 INTRODUCTION

One of the most desired characteristics of desert living is the relatively quiet, peaceful and tranquil attributes compared to the busier urban settings of southern California. In analyzing the quality of life in the community of Twentynine Palms, these attributes represent the City's greatest assets. The Noise Element of the General Plan represents a major endeavor in the attempt to retain and protect the desert quality of life by preventing, reducing and controlling noise.

Noise can basically be defined as unwanted sound. The most common source of noise is transportation modes. Because of this fact, state law requires that the Noise Element concentrate on transportation noise. Although the authority for regulating automobiles, motorcycles, and truck noise is held by the State of California, the City may enforce some of these state laws regarding vehicle noise. (A discussion of jurisdictional authority in noise control will follow).

The major source of noise in the Twentynine Palms community is generated by transportation, construction, human activity and combat exercises on the Marine Corps Base. There is also a future potential noise issue in the flight pattern of the Twentynine Palms Airport. However, there are some fixed source noise generators that can be controlled by the City and abated through an active Community noise control program.

The state legislation that requires the Noise Element specifies that noise contour lines showing the 65 db (A) contour be shown along major transportation routes. These contours to be shown along Twentynine Palms Highway (SR62), around the Twentynine Palms Airport and, in the future, on Amboy Road.

2.0 CHARACTERISTICS OF NOISE

Sound has several characteristics that includes loudness, frequency, pitch, duration and cycle consistency. For humans, the two most significant characteristics are pitch and loudness. These two factors when inflicted in excess, according to the medical profession, can annoy and impair the ability to hear. Noise can also produce a psychological effect on humans, and in the case of excess, will result in hearing loss. Further medical research indicates that noise can, tentatively, be linked to cardiorespiratory and digestive disorders.

Towards the goal of protecting a desert living environment and protecting the health of the citizens of the community, excessive and unnecessary noise must be actively abated.

3.0 IDENTIFICATION OF NOISE SOURCES

3.1 AIRCRAFT NOISE

EXHIBIT 38

Typical Noise Levels of Familiar Sources

	dB(A)	
	145	
Physically Painful	140	Sonic Boom
Extremely Loud	135	
	130	
	125	Jet Takeoff at 200'
Discomforting	120	Oxygen Torch
	115	Discotheque
	110	Motorcycle at 15' (Unmuffled)
	105	Power Mower at 3'
Very Loud	100	Newspaper Press
	95	Freight Train at 50'
	90	Food Blender
	85	Electric Mixer, Alarm Clock
	80	Heavy Truck at 50'
	75	Busy Street Traffic at 50'
	70	Average Traffic at 100', Vacuum Cleaner at 10'
Loud	65	Electric Typewriter at 10'
	60	Dishwasher at 10', Air Conditioning Unit at 15'
	55	Normal Conversation at 5'
	50	Typical Daytime Suburban Background
	45	Refrigerator at 10'
	40	Bird Calls
	35	Library
	30	
Quiet	25	
	20	Motion Picture Studio
	15	
	10	Leaves Rustling
	5	
Threshold of Hearing	0	

EXHIBIT 40

Harmful Effects of Noise

Effects	Noise Levels At Which Harmful Effects Occur
Prevention or Interruption of Sleep	35 - 45 dB (A)
Speech Interference	50 - 60 dB (A)
Extra Auditory Physiological Effects	65 - 75 dB (A)
Hearing Loss	75 - 85 dB (A)

1. Source: California Department of Public Health Report to 1971 Legislature

At the present time, all aircraft noise is regulated, mainly, through federal and state regulations. The Federal government is moving through the Environmental Protection Agency (EPA), Federal Aviation Authority (FAA), Department of Transportation (DOT), the Airlines, Airport Authorities and Aircraft Manufacturers, to solve problems of aircraft noise. The State government is concerned with protecting the public from noise by enacting standards and defining compatible land uses around Airports.

The state has found the following land uses compatible within the noise impact boundaries of airports:

- a) agricultural, airport industrial and commercial property;
- b) aviation easement for noise;
- c) open space; and
- d) acoustically treated residential

3.2 MOTOR VEHICLE NOISE

Since the Federal government is responsible for the control of surface carriers and motor vehicles engaged in interstate commerce, they have the responsibility to promulgate standards for highway noise and emissions.

The state program consists of enforcement of vehicle noise emission for all motor vehicles subject to state registration. The California Highway Patrol has the prime responsibility for the enforcement of noise standards but the local police authority may also enforce these regulations.

The City of Twentynine Palms may adopt and enforce noise ordinances that do not conflict with the state general laws. However, the right to control noise limits for on road vehicles is a sovereign power of the state; consequently, the City cannot enforce noise limits on public streets.

3.3 CONSTRUCTION AND INDUSTRIAL NOISE

The regulation of noise standards generated by construction equipment and industrial sites is under the jurisdiction of OSHA and EPA. The City may, notwithstanding, establish curfews on the hours of operation of these facilities.

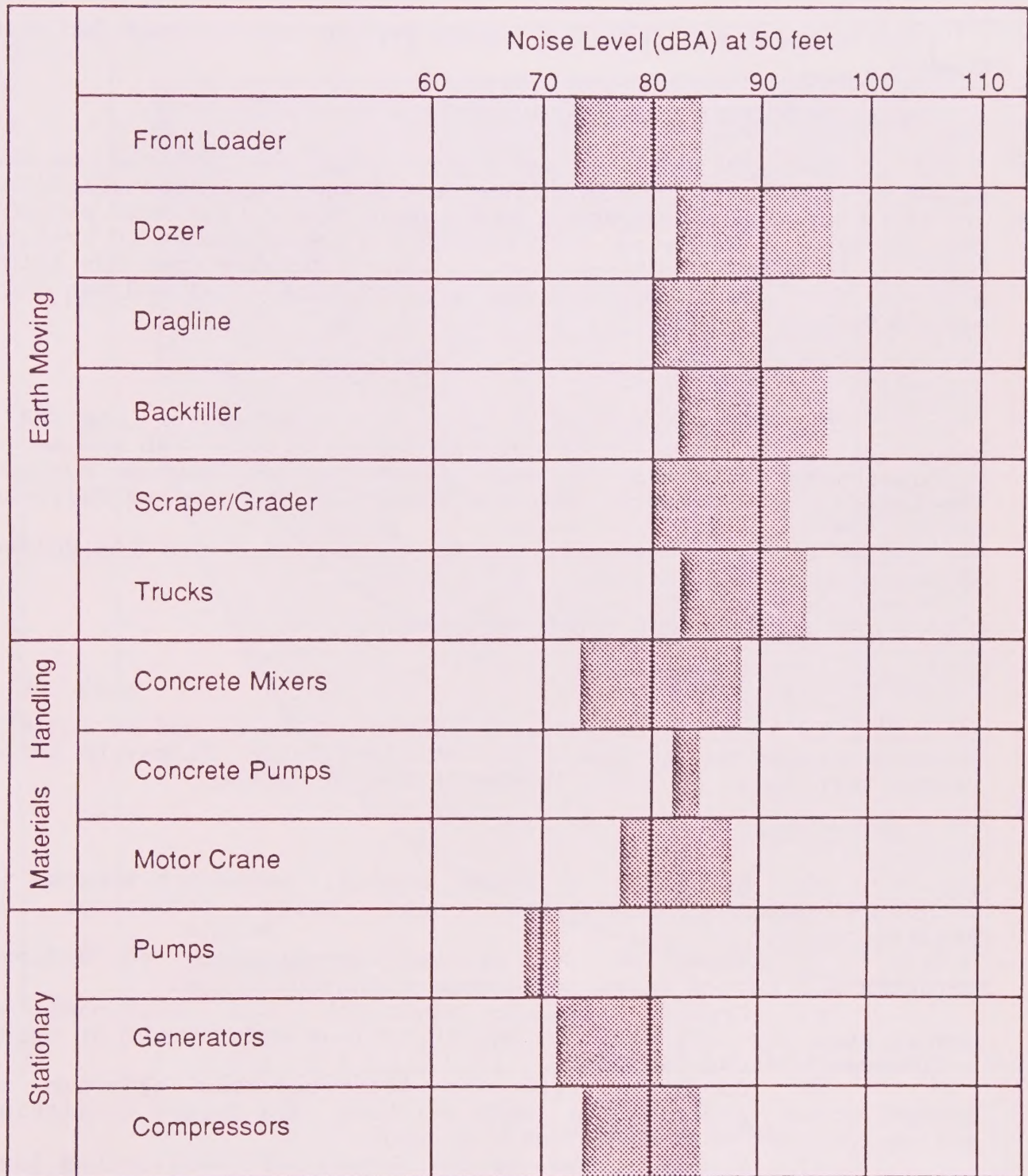
3.4 NOISE SOURCES CONTROLLABLE BY THE CITY

The City, through its power of police to secure and promote the public health, safety and welfare, may enact noise standards to regulate and control;

- a) Amplified sound,
- b) Noise making apparatus,
- c) Disturbers of the peace, and
- d) Human voice and animal noise.

EXHIBIT 43

Construction Noise



Source: EPA, 1971; "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances". NTID300.1

4.0 NOISE LEVEL MEASUREMENT

Two scales for defining noise levels can be used for this Element:

4.1 COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)

The CNEL system takes into account the duration of the noise in addition to the magnitude and frequency characteristics, and the number of occurrences in a twenty-four (24) hour period. The level is adjusted by applying the measurements to evening periods (7:00 p.m. to 10:00 p.m.) and nighttime periods 10:00 p.m. to 7:00 a.m.) weighing factors of three (3) and ten (10) respectively.

4.2 DAY-NIGHT AVERAGE SOUND LEVEL (Ldn)

The Ldn average sound level is similar to the CNEL, except that the three hour evening period of the CNEL system is combined with and given the same weight as the daytime period. The Ldn scale is used in the development of Highway and Railroad noise levels.

Noise contours developed by CNEL and Ldn procedures seldom differ by more than one decibel.

5.0 NOISE ELEMENT GOAL AND OBJECTIVES

GOAL:

To identify acceptable levels of noise and to control noise generated in the community of Twentynine Palms to those levels that cause no human stress or health damage.

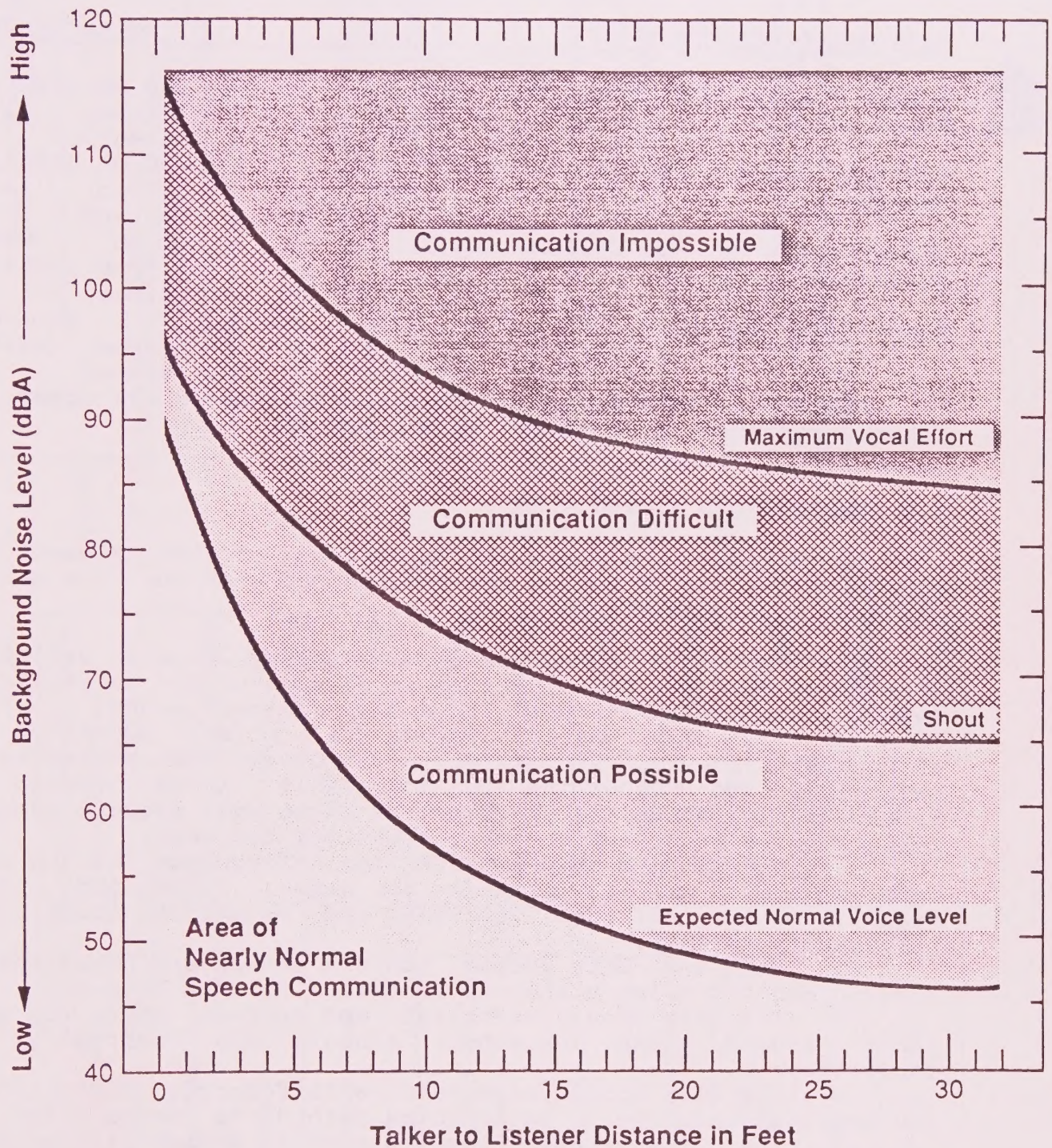
OBJECTIVES:

- a) Establish a noise control education program to encourage voluntary compliance with noise ordinances and regulations;
- b) Establish a systematic program to enforce existing and future noise ordinances and regulations;
- c) Provide adequate equipment and personnel or secure same by contract, to ensure optimum enforcement of noise ordinances and regulations;
- d) Cooperate with the transportation agencies to control noise generated by both existing and future facilities and equipment;
- e) Prohibit the establishment of conflicting land uses in the Twentynine Palms Airport flight pattern that would cause future noise problems.

6.0 DESIRED MAXIMUM NOISE LEVELS

EXHIBIT 39

Background Noise Level



Source: Miller, "Effects of Noise on People", Journal of Acoustical Society of America, V.56, No.3, 9/74

* DESIRED MAXIMUM NOISE LEVELS
BY LAND USE CATEGORIES

LAND USE DISTRICTS	NOISE LEVELS
Single Family; OSR, E and RS, Residential	45 db CNEL's (from living areas)
Multiple Family: RM Residential	50 db CNEL's (from living areas)
Commercial; CN, CO, CT, CD, and CQ, Public; P	60db CNEL's (from activity areas)
Industrial; IG, OI and CS	70 db CNEL (from working areas)

* Desired noise levels may not be feasible in all cases, the figures represent a target to be strived for.

7.0 RECOMMENDED ACTION PLAN

To implement the Goals and Objectives of this Element, the following courses of action are recommended when the City has the ability to undertake them:

a) The City should review existing County ordinances adopted by the City pertaining to noise control and adopt its own regulations prohibiting unwanted and unnecessary sound;

b) The City should pursue a noise education and enforcement program in which a strategy and procedure is established to determine non-compatible noise sources and systematically abate the problem. To do so will require adequate personnel and equipment or the contracting for same;

c) The City should promote the enforcement of the motor vehicle code as it pertains to noise, adopt and enforce regulations for off-road vehicles and establish truck routes throughout the City.

d) When the City adopts its own zoning ordinance that it incorporate the noise standards contained in this Element;

e) The City should establish and provide signs for "quiet zones" around parks, churches, schools and hospital or care facilities;

f) The City should cooperate with Federal, State, County and Regional agencies in determining methods to reduce noise;

g) The City should require special design standards for projects that are proposed within areas that exceed the noise level requirements to assure reasonable noise attenuation; such noise mitigation plans to be certified by a registered acoustician.

EXHIBIT 41

Land Use Compatibility Chart

Land Use Category	Community Noise Exposure Ldn or CNEL, dB					
	55	60	65	70	75	80
Residential - Low density Single Family, Duplex, Mobile Homes	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Multiple Family	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Transient Lodging - Motels, Hotels	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Office Buildings, Business, Commercial and Professional	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable

Legend



Normally Acceptable

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements



Conditionally Acceptable

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Outdoor environment will seem noisy.



Normally Unacceptable

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded



Clearly Unacceptable

New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

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